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NOTE

Fishery Circulars 1 through 28 were issued by the Bureau of Fisheries, United States Department of Commerce, during 1931-39. On July 1, 1939, the Bureau of Fisheries was transferred from the Department of Commerce to the United States Department of the Interior; June 30, 1940, it was consolidated with the Bureau of Biological Survey to form the Fish and Wildlife Service.

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U. S. DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES

Fishery Circular No. 1

Issued June, 1931

SPORT FISHING IN CHESAPEAKE BAY¹

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INTRODUCTION

Interest and participation in sport fishing in Chesapeake Bay as well as throughout the United States are of much greater extent to-day than ever before. Facilities for reaching fishing grounds are now as nearly perfect as they can be, but, nevertheless, there are many more people who, having an occasional holiday, would gladly enjoy a few days' fishing if they but knew when and where to go to such places as would offer a reasonable chance of catching fish. Salt-water angling has not had as many enthusiasts as fresh-water angling, largely because the former is generally more expensive, the potential fishing area of vastly greater size, and good fishing grounds, therefore, less defined and recognized. However, greater numbers of larger and gamier fish can be secured from salt water than from fresh water, and the angler does not have to worry about closed seasons when fishing for strictly salt-water species. The possibility that a 4-foot shark or a 50-pound channel bass may suddenly grab the hook while one is awaiting a gentle nibble from a spot or croaker gives salt-water angling in Chesapeake Bay a thrill all its own and repays for the extra trouble and expense in reaching the better fishing areas.

¹ Approved for publication Jan. 23, 1931.

FISHING GROUNDS

There is hardly a wharf, bridge, or jetty throughout tidewater Maryland or Virginia that does not offer the angler an opportunity to try his luck and skill. Dozens of species of excellent marine food and game fishes abound in Chesapeake Bay from early spring until late fall. However, the best sport fishing in the bay is had generally some distance from land or from the nearest town and must be conducted from rowboats or small power boats. In some sections of the bay the most popular and productive fishing grounds lie several miles offshore and can only be reached by power boat, but there are many other fine fishing grounds where only a rowboat is required.

As a general rule the best angling is obtained near the mouth of the bay and along the adjacent beaches of the Atlantic Ocean. The larger and gamier fish apparently prefer to remain in or near the open sea and do not wander far into the bay or its tributaries. Naturally, the quantity of marine fish gradually decreases and the variety becomes more limited when one approaches brackish and fresh water.

The general quality of sport fishing in Chesapeake Bay can not be judged by the writer. Many fishermen might consider the angling in the bay poor compared with the east coast of Florida, while others might believe it excellent compared with the average freshwater stream or lake. A definite promise of good fishing with abundant catches can not be made for any portion of the bay at any definite time by the most experienced anglers. It is believed that the fishing centers described in this paper represent the most accessible and productive fishing grounds in the bay and offer the salt-water angler a reasonable chance to catch fish during the proper seasons.

It is obviously impossible to list the many less-important localities scattered everywhere about the bay where good angling is often secured. The writer regrets the necessity for such omissions, but he is confident that the average angler will continually seek better fishing grounds no matter where they may be located.

METHODS

Sport fishing throughout Chesapeake Bay is conducted by means of hook and line either from rod and reel, hand line, or trolling. The striped bass or "rockfish" and the bluefish are often taken by trolling; but, generally, all other game fishes occurring in the bay are secured with a baited hook. Rod and reel provides the best all around tackle. A light rod with a reel to carry about 200 yards of number 12 thread is suitable for sea trout and the smaller species while for channel bass and larger marine fish a heavier rod and reel equipped with number 15 or 18 thread is necessary. The various sizes and types of hooks to be used depend largely on the species of fish desired and must be determined by the individual angler.

The blue crab is the preferred bait for angling, although shrimp, clams, mussels, and fish are often used. The "soft" or molting stage of the blue crab surpasses the "hard" crab as an effective bait. The artificial lure generally used in Chesapeake Bay in trolling is the

Huntington spoon or "drone" or something similar. This spoon may be trolled from a slow-moving power boat either at the surface of the water or near the bottom as fishing conditions warrant. Often several spoons are placed on a single line. When bluefishing, it is customary to cut up the oily menhaden or "bunker" into fine pieces called "chum" and to cast it over the surface of the water to attract the voracious bluefish. Large meat grinders are standard fishing equipment on many power boats that troll for bluefish at York Spit Light and other localities in order to provide "chum" finely ground and in large quantities.

SEASON

The sport fishing season in Chesapeake Bay extends from the middle of May to the last of October. Along the shores of the Atlantic Ocean and at the mouth of the bay, angling may usually be had somewhat earlier and later in the season than for the main portion of the bay. The best fishing is obtained during the summer and early fall months, although many species may be more plentiful at certain times than at other times during the season. The croaker, for instance, is more abundant in the spring of the year than in the fall while bluefish is found to be more common during the summer and early fall months. The stage of the tide determines in most places the time of day for the best angling. Experienced fishermen generally believe that the period from an hour before to an hour after slack tide is the best, but there are many exceptions to this rule.

LOCALITIES AND FACILITIES

A description of sport fishing localities and facilities on Chesapeake Bay must, necessarily, center about a limited number of settlements or towns where boats, guides, bait, hotels, and restaurants are available and in reasonable distance from good fishing grounds. Figure 1 shows the approximate locations of the leading fishing centers on the bay and the adjacent Atlantic coast line. The numbers designating these centers, the order of arrangement, and the amount of space devoted to each locality do not indicate in any way the quality of fishing to be had by the angler. It is suggested that all anglers take time to inquire carefully about boats, guides, and other fishing facilities most suited to their desires. The rates for hire of power and rowboats naturally vary considerably and approximate prices only can be given in this paper.

(1) *Ocean City, Md.*—This seaside resort is located on the ocean side of Maryland between Sinepuxent Bay and the Atlantic Ocean. In former years angling was considered excellent at this place, but the recent closure of a near-by inlet has affected the quality of the fishing to some extent. Fishing in the bay for gray sea trout (weakfish), croakers, spots, and small bluefish is considered best during August and September and is generally done from rowboats. Surf fishing along the ocean beach for channel bass, black drum, and gray sea trout provides, perhaps, the best angling and is done principally during June and September. Early morning on the flood tide is the favorite time for surf fishing. Soft or hard crabs are generally used as bait although menhaden (bunkers) or squid are preferred

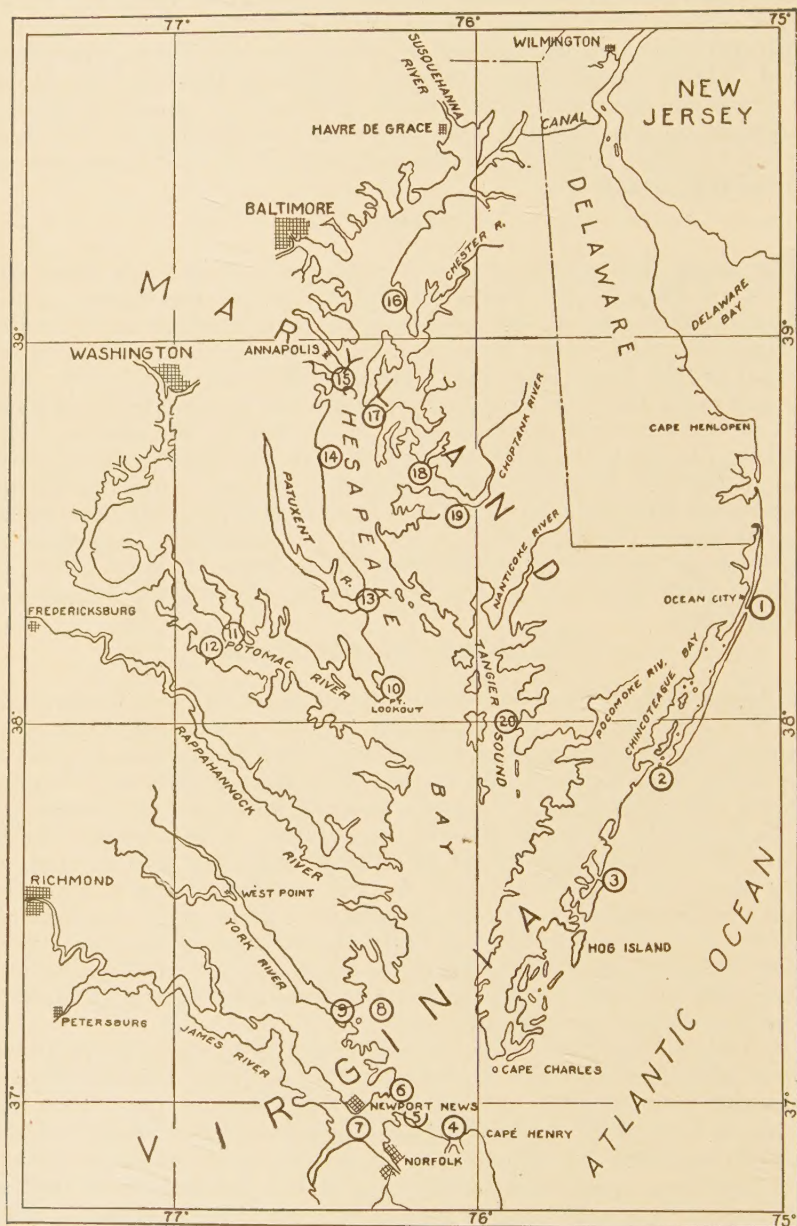


FIGURE 1.—Fishing localities of Chesapeake Bay and vicinity

for surf fishing for channel bass. Rowboats and small power boats for bay fishing may be secured at the rate of \$1 a day for rowboats and \$6 a half day for a power boat including guide. Hand lines but not bait are generally furnished free. Hotel and restaurant facilities are excellent at Ocean City.

(2) *Chincoteague, Va.*—This fishing village, located at the mouth of Chincoteague Bay, 3 miles from the inlet and the Atlantic Ocean, on the eastern shore of Virginia, is well situated for reaching good fishing grounds. The fishing season extends from May 1 to October 31 although certain fish are caught only during part of the season. Gray sea trout, croakers, channel bass, sea bass, and bluefish are the principal game fish. The channel bass, the outstanding sport fish, is taken generally from June 1 to the last of July and again during September. Bluefish trolling is done extensively from June to September. The presence of several sunken wrecks offshore from the inlet provides good fishing grounds for sea bass, scup, and small sharks. Soft crabs and squid are used for general fishing bait, and the menhaden is nearly always used for channel bass fishing. Both beach and boat fishing are possible at Chincoteague although it is necessary to hire a boat to reach the ocean beach. There are many fisherman at Chincoteague who have boats for hire, and no trouble will be had in obtaining an experienced guide. The rate for a power boat including guide is usually \$10 a day for 1 or 2 persons and \$5 a day for each additional person. Bait and hand lines are furnished with the boat. Several hotels and restaurants provide lodging and meals for the angler.

(3) *Wachapreague, Va.*—This well-known angling resort, located on the ocean side of the eastern shore of Virginia, about 6 miles from the inlet and the Atlantic Ocean, is considered one of the most popular fishing resorts along the Atlantic seaboard. The general fishing season lasts from May 1 to November 1. The channel bass, the best game fish, is caught mainly during June, July, September, and early October; the gray sea trout from May throughout the season; the croaker during May and June; the summer flounder during May; and the bluefish from June throughout the season. Kingfish, sea bass, spots, hogfish, and sharks are also taken during the summer months. Soft crabs and squid are used for general fishing and menhaden for channel bass fishing. Approximately 35 power boats with guides are available at Wachapreague during the fishing season. The charge for a power boat is \$6 a day for one person and \$2 a day for each additional person. Several hotels provide accommodations for the sportsmen, and arrange trips to the fishing grounds.

(4) *Lynnhaven Inlet.*—This fishing resort, situated a few miles inside Chesapeake Bay, furnishes one of the best fishing grounds in the lower bay. The inlet connects the water of Lynnhaven Roads—a part of Chesapeake Bay—with a large body of brackish water known as Lynnhaven Bay. The general fishing season extends from May 1 to November 15. Spotted or "salmon" sea trout, striped bass or rockfish, spots, croakers, and flounders are taken about the inlet proper, while several miles offshore in the deeper waters of Chesapeake Bay and nearer Cape Henry larger game fish such as the channel bass, black drum, sharks, cabio, and bluefish are

secured. The striped bass are most abundant from August to the latter part of November, spots from June to October, spotted trout from August to November, croakers from May to June, and channel bass from October to November. The bluefish are caught mainly by trolling offshore and the black drum and channel bass by surf fishing. Soft or hard crabs, clams, and mussels are used for general fishing; live minnows for flounders; and artificial bait (spoon or squid) for striped bass and surf fishing. Fishing in the inlet can be done from rowboat, bridge, or shore line but offshore fishing requires a power boat. The rates for rowboats are from \$1 to \$2 a day, while power boats with guides are \$3 an hour for inshore fishing and \$4 an hour for offshore fishing. Hand lines and bait are extra. There are no hotels at Lynnhaven Inlet but good hotels are available at Virginia Beach, Ocean View, and Norfolk, Va.

(5) *Ocean View, Va.*—This pleasure resort, located on Chesapeake Bay, just below the mouth of the James River, offers the most popular and cheapest fishing for the amateur angler in the bay. Thousands annually take advantage of the excellent hand-line fishing to be had a short distance offshore and, while the variety and size of fish may be somewhat limited at Ocean View, the quantity is not. The fishing season lasts from May 1 to November 1 although the best fishing is found during the summer and early fall months. Croakers, spots, gray sea trout, hogfish, flounders, and bluefish are caught mainly by hand lines baited with hard or soft crab. The gray sea trout are most abundant during May, June, September, and October while croaker and spot fishing is best during August and September. The stage of the tide is an important factor in the fishing off Ocean View, slack water being considered the most favorable time. The rowboat is generally used to reach the near-by fishing grounds. The rates may vary per person from \$1 for three hours fishing to \$1 for two hours fishing. Boats with attendants are \$1 per person with a minimum of 3 persons with a 25 cent charge per person for each additional hour over two or three hours. Bait and hand lines are furnished with the rowboat. Rowboats with awnings are slightly more expensive. There are many hotels and restaurants at Ocean View.

(6) *Old Point Comfort, Va.*—This famous vacation center is well situated for reaching a number of good fishing grounds in lower Chesapeake Bay. Fishing grounds off Ocean View, Willoughby Spit, Fort Wool, Thimble Light, Buckroe Beach, and York Spit Light can all be reached by power boat from Old Point Comfort within a short time. Rates for a suitable power boat are about \$3 per hour with a maximum capacity of 5 persons. Power boats are available here for day or overnight fishing parties. Hotel accommodations are excellent.

(7) *Newport News, Va.*—This city on the James River offers some local angling at various points in Hampton Roads and the James River. Boats may be hired at the public pier and the Small Boat Harbor.

(8) *York Spit Light, Va.*—This fishing ground, located in Chesapeake Bay at the mouth of the York River, is one of the best angling spots for bluefish in the bay but is, unfortunately, somewhat too isolated to provide popular fishing. York Spit Light is usually

reached by power boat from Old Point Comfort, Yorktown, Gloucester Point, Mobjack, or Back River (Messick), Va. The fishing season extends from June to November and many varieties of food and game fishes may be taken during this period. Bluefish are secured from July to September; gray sea trout, spot, and hogfish from June to October; tautog or "chub" from October to December; and cabio from July to September. Soft and hard crabs, shrimp, squid, and menhaden are used as bait; the latter usually being "chummed" or scattered over the surface of the water to attract the bluefish. The latter are then secured by heavy hand line equipped with wire leader and hook. Commercial hook and line fishermen at York Spit often land 400 pounds of bluefish a day per boat, so abundant are these fish at times in this vicinity.

(9) *Yorktown and Gloucester Point, Va.*—These towns are well located for reaching fishing grounds at various points in the York River and at York Spit Light. While the angler who wants plenty of fish would probably do better at York Spit, nevertheless, good catches of gray sea trout, croakers, and bluefish are made in the York River itself during the summer and early fall months. Row-boats and small power boats may be hired at Yorktown, Gloucester Point, and Wicomico, Va.

(10) *Point Lookout and Scotland Beach, Md.*—These resorts at the mouth of the Potomac River on Chesapeake Bay offer sport fishing for gray sea trout, croakers, spots, bluefish, and even small sharks. Hotels are available at both places, and boats may be secured upon inquiry at the hotels.

(11) *Rock Point, Md.*—Rock Point, situated on the lower Potomac, offers good near-by fishing grounds to the angler. The croaker is abundant during June; the gray sea trout, spot, bluefish, and white perch during July, August, and September; and the striped bass or rockfish during October. Trolling for striped bass and bluefish is quite popular at this locality. Power boats can be hired at Rock Point at the approximate rate of \$1.50 per person for 5 hours fishing with a minimum of four persons to the boat. Many local experienced guides can be found who have power and row boats for hire. Several small hotels provide meals and overnight accommodations for the sportsman.

(12) *Colonial Beach, Va., and Morgantown, Md.*—A small amount of sport fishing is done from these points on the Potomac River. Striped bass, bluefish, croakers, and gray sea trout are the principal species taken. Boating facilities, however, are not very extensive at either of these places.

(13) *Solomons Island, Md.*—This town, located at the mouth of the Patuxent River, is the nearest point on Chesapeake Bay to Washington and Baltimore where good angling may usually be had during the fishing season. The croaker is taken in abundance here throughout the season but particularly from May 15 to June 15. Gray sea trout and spots are taken from July 1 to November 1; bluefish during August and September; and striped bass from May 15 to June 15, and from October 15 to November 15. Hard or soft crabs are used as natural bait, and spoons or squid for bluefish and striped bass trolling. Boating and guide facilities are excellent. Power boats including guides are usually furnished at the rate of

\$5 for 4 hours' fishing with bait and lines included. Boats used for trolling are charged for at the rate of \$1.50 an hour.

(14) *Chesapeake Beach, Md.*—This pleasure resort offers offshore fishing in the bay from June to October. Croakers, gray sea trout, spots, and bluefish are the leading fish. The croaker is most abundant during June, and the gray sea trout during the fall months. Power boats may be obtained at the rate of \$1.25 per person with a minimum of 5 persons for 5 hours' fishing. Rowboats can be secured for inshore fishing.

(15) *Annapolis, Md.*—This interesting capital provides near-by angling both in Chesapeake Bay and in the adjacent tidal estuaries during the summer and early fall months. The variety and quantity of strictly marine fish, naturally, is limited at this point on the bay but gray sea trout, croakers, and bluefish are taken in good numbers at times during the season. Trolling and rod and reel fishing for the striped bass or rockfish, however, provides fine sport and often makes up for the dearth of other varieties. Power boats can be hired along the water front at Annapolis for near-by angling. Numerous hotels are available.

(16) *Rock Hall and Love Point, Md.*—These centers on the eastern shore of the bay are situated in a favorite region of the striped bass. Trolling for this fine game fish is done at both places during the summer and early fall. Power boats may be hired from many fishermen at Rock Hall but good hotel facilities are lacking at the present time.

(17) *Claiborne, St. Michaels, and Tilghmans, Md.*—These towns provide ample facilities for angling both in Chesapeake Bay and near-by estuaries. Croakers are taken in abundance from May 1 to June 15; gray sea trout, from June 1 to October 15; bluefish, from June 15 to October 15; and striped bass or rockfish, from September 1 to November 15. Trolling and casting for striped bass are particularly good at these points during the late summer and fall months, and provide some of the best fishing in this section of the bay. The spoon or "drone" is, of course, used in trolling and soft crabs are used for still striped-bass fishing. Power boats may be obtained from many fishermen at each of the above towns. The rates are about \$8 a day for a party of one to five persons. Hand lines but not bait are generally furnished along with the boat and guide.

(18) *Oxford, Md.*—This fishing center near the mouth of the Choptank River offers good angling in near-by waters. Gray sea trout are taken from July to September; croakers, from May to August; bluefish, during August and September; and striped bass or rockfish, during the summer and fall months. The best still fishing or casting for striped bass is during the summer months while trolling is best from September 1 to October 15. Soft crabs are used for general fishing bait. Various makes of spoons are used in trolling for bluefish or striped bass. Power boats accommodating up to six persons may be found for hire at an approximate rate of \$10 a day. Small boarding houses are available.

(19) *Cambridge, Md.*—This town on the Choptank River is somewhat too far removed from the mouth of the river and Chesapeake Bay to offer extensive fishing facilities, but angling for bluefish,

gray sea trout, croakers, and striped bass is often good in the river near the town. Power boats with guide may be hired for about \$10 a day. Many hotels and restaurants are available at Cambridge.

(20) *Crisfield, Md.*—This well-known sea-food center on the Eastern Shore of Maryland offers access to the fishing grounds located in Tangier and Pocomoke Sounds. The best fishing is from the first of June to the middle of July and from September to November. Croakers, gray sea trout, and bluefish are the principal species secured. Trolling for bluefish during August is good. The average rate of hire for a power boat is \$10 a day for a maximum of 4 persons. Bait (soft crab) and hand lines are generally furnished with the boat.

GAME FISHES

A short description of the leading games fishes of Chesapeake Bay may be appropriate in this paper. The reader desiring more detailed information is referred to the various books listed in the bibliography.

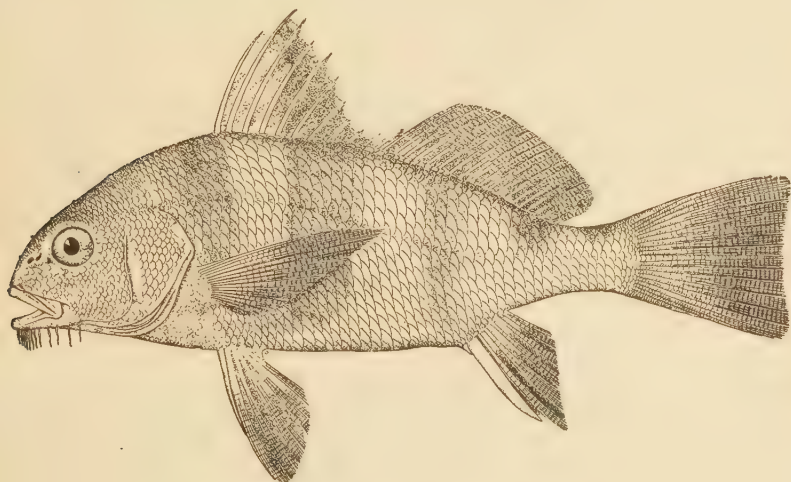


FIGURE 2.—Black drum (*Pogonias cromis*)

BLACK DRUM

Geographical distribution.—The black drum occurs with varying abundance in the different localities along its range from Massachusetts to Texas. The species is most abundant in the shallow lagoons along the Texas coast, and may be regarded as a warm-water fish.

Commercial importance.—The black drum as a food fish does not hold a high rank as the flesh of larger specimens is apt to be coarse and unpalatable. Texas leads in the catch of drum, yielding about 65 per cent of the total annual catch of about a million and a half pounds: Texas, 951,277 pounds in 1929; Louisiana, 266,367 pounds in 1929; and Florida, 164,771 pounds in 1928. Along the coasts of Virginia, Maryland, and New Jersey considerable quantities of drum

are found every summer. The fish presumably come north in the spring and move southward again in the fall. Maryland produced 32,000 pounds in 1929; and New Jersey, 31,000 pounds in 1926.

Size attained.—The black drum often reaches a weight of about 20 pounds, while individuals over 50 pounds are not rare. The largest fish on record weighed 146 pounds while the largest ever taken on rod and reel weighed 90 pounds.

Food habits.—The black drum is a bottom feeder and grubs around in search of small shellfish and other marine invertebrates on which it feeds. It is provided with broad pavementlike teeth and very powerful jaws which can easily crush all but the most heavily armored shellfish.

Reproduction.—In Florida and Texas the species spawns in March and April. The large drum are exceedingly prolific; a female, 44 inches long, taken near Corpus Christi, Tex., in March, 1927, yielded from four to five millions eggs. Sexual maturity is usually attained at the end of the second year.

The drum makes a loud drumming noise, especially during the breeding season. This drumming is probably for the purpose of attracting the opposite sex.

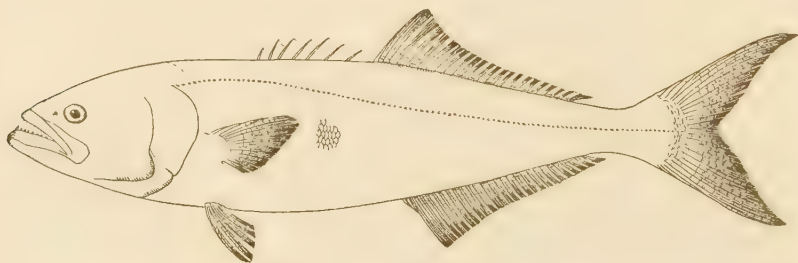


FIGURE 3.—Bluefish (*Pomatomus saltatrix*)

Rate of growth.—The black drum reaches an average length of 10 inches by the end of the first year; 14.5 inches by end of the second year; 16.5 inches by the end of the third year while a fish about 27 inches long may be approximately seven years of age.

As a game fish.—Only large black drum appear to visit the coasts of Virginia, Maryland, and New Jersey; and, consequently, surf angling for them is most exciting. The usual method of angling is with a heavy hand line, with sinker attached, the hooks being fastened above the lead; or with a stout rod and reel. Soft crabs or fish make the best bait.

BLUEFISH, "TAILORS"

Geographical distribution.—The bluefish has a wide range in the Atlantic Ocean, the Gulf of Mexico, the Mediterranean Sea, and the Indian Ocean. It strays as far north on the coast of the United States as Maine.

Commercial importance.—The bluefish is a most valuable food fish along the entire Atlantic coast. In midwinter the schools of bluefish are caught off southern Florida; then during March and April off the Carolinas; while the first catches are made off New

Jersey and Long Island during April and May. In southern Massachusetts the first catch is made late in May.

Florida leads in catch, 989,290 pounds in 1928; North Carolina, second, 631,166 pounds in 1929; and New Jersey, third, 628,241 pounds in 1926.

Size attained.—The maximum authentic weight is given as 27 pounds.

Food habits.—The bluefish is a voracious feeder, being highly predatory on other fishes. Schools of bluefish are known to follow schools of menhaden and other fishes, ravenously attacking them.

Reproduction.—This species is supposed to spawn a considerable distance offshore during the early summer. Young bluefish have been recently taken from Massachusetts to Chesapeake Bay during the summer months and usually some distance from land.

Rate of growth.—Very little definite information is available on the rate of growth of the bluefish.

As a game fish.—Trolling or hand-line fishing is the usual method of taking bluefish for sport in Chesapeake Bay and elsewhere. Unfortunately, these methods do not tax the skill of the angler or his tackle and can hardly be called appropriate for one of the best



FIGURE 4.—Cabio (*Rachycentron canadus*)

American game fishes. Built for strength, speed, and endurance, armed with teeth of razor sharpness and whetted by an appetite that seems insatiable, the bluefish presents almost a perfect game fish for the true sportsman.

In Chesapeake Bay small bluefish called locally "tailors" predominate. These fish weigh from one-half to 2 pounds and are very abundant, providing fine angling when proper tackle is used.

CABIO, "BLACK BONITO"

Geographical distribution.—The cabio ranges from New Jersey to Brazil and is not common in any portion of its range.

Commercial importance.—The usual size of the market fish in lower Chesapeake Bay is from 10 to 50 pounds. About 3,000 pounds are caught annually in the bay. The cabio is cut into steaks and makes excellent food. Florida leads in production, 17,877 pounds in 1928.

Size attained.—A fish weighing 84 pounds was taken by hook and line off Buckroe Beach, Va., in June, 1921. This appears to be the maximum size of the species.

Food habits.—Fish and crustaceans are utilized as food by the cabio.

Reproduction.—Little is known concerning the spawning season of this species. It is believed, however, to spawn in open sea during early summer since young fish, a few inches long, have been taken recently in the Gulf of Mexico during July and August.

Rate of growth.—Nothing is known of the rate of growth.

As a game fish.—The cabio ranks as the largest game fish caught within Chesapeake Bay. It is said to provide most exciting sport when taken by rod and reel or hand line.

CHANNEL BASS, "RED DRUM"

Geographical distribution.—The channel bass occurs in greatest abundance in the South Atlantic and Gulf States, although stragglers have been taken as far north as Massachusetts.

Commercial importance.—Florida leads all States in total catch as follows: Florida, 1,091,362 pounds in 1928; Texas, 934,286 pounds in 1929; and Louisiana, 444,863 pounds in 1929. The fish is not taken in commercial quantities north of New Jersey.

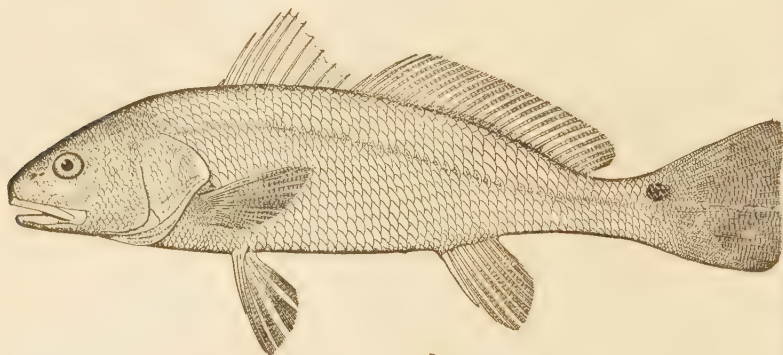


FIGURE 5.—Channel bass (*Sciaenops ocellatus*)

Size attained.—The largest channel bass on record weighed 77 pounds, and the largest caught on rod and reel (off the New Jersey coast in 1919) weighed 65 pounds.

Food habits.—The food of the channel bass consists largely of crustaceans such as shrimp and crabs. Fish are eaten to some extent by the larger channel bass.

Reproduction.—Spawning takes place during September and October from Chesapeake Bay to Texas in the open sea, usually near the mouth of some inlet or bay. Maturity is reached at the end of the fourth or fifth year after the fish has reached a length of at least 30 inches. Approximately 3,500,000 eggs were contained in a female, 35½ inches long, captured in Texas in September, 1929.

Rate of growth.—The channel bass grows very rapidly, attaining a length of about 13.5 inches along the Texas coast and a weight of about a pound during the first year of life. By the end of the second year a length of 21 inches and a weight of 4 pounds

generally reached; and by the end of the third year approximately 25 inches in length and 7 pounds in weight may be attained. A study of the scales indicates that a fish 33 inches long weighing 14 pounds may be 6 years old.

As a game fish.—The channel bass is perhaps the most prized game fish along the Virginia, Maryland, and New Jersey coasts. It is essentially a fish of the sandy beaches and is usually caught by surf fishing. Needless to say, its reputation among anglers is high. Stout tackle is required for the fish are generally large along the Virginia and Maryland coasts.

CROAKER, "HARDHEAD"

Geographical distribution.—The croaker ranges from Massachusetts to Texas. However, the species is not common north of New Jersey.

Commercial importance.—It is one of the commonest food fishes of the Atlantic and Gulf States. Virginia leads with a production of

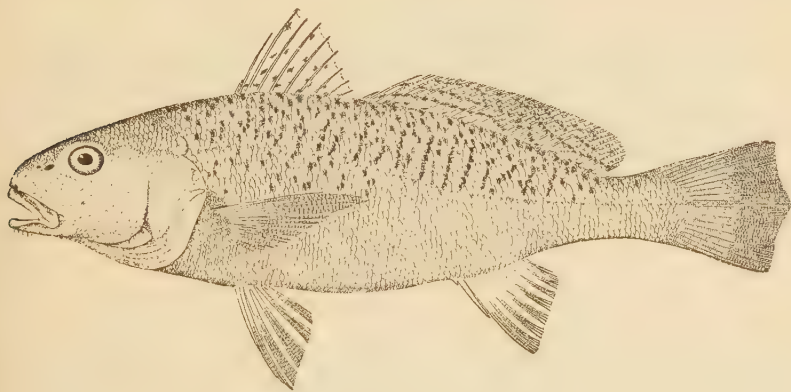


FIGURE 6.—Croaker (*Micropteron undulatus*)

14,413,937 pounds in 1929; North Carolina, 7,679,391 pounds in 1929; New Jersey, 2,455,867 pounds in 1926.

Size attained.—The maximum size is about 20 inches in length and 4 pounds in weight.

Food habits.—The croaker is adapted for bottom feeding. The food consists largely of invertebrate animals such as crabs, shrimp, worms, and mollusks. Small fishes are sometimes eaten.

Reproduction.—The croaker has an extended spawning season. In North Carolina, recently hatched young have been taken every month in the year, exclusive of June, July, and August. The principal spawning time along the Virginia coast extends from August to September; along the North Carolina coast from September to April; and along the Texas coast from October to February.

The roe of a female, 15.5 inches long, taken in Chesapeake Bay on October 25, 1921, contained approximately 180,000 eggs.

Rate of growth.—The croaker reaches an average length of about 6 inches at the end of its first year of life and about 8.6 inches at the end of the second year. Growth after the second year has not yet been satisfactorily determined.

As a game fish.—The croaker is the most abundant fish in the anglers' catch throughout Chesapeake Bay. When other fish do not bite, one may be sure to catch some croakers. It usually takes the bait of shedder crab or shrimp ravenously and provides good sport when light tackle is used.

GRAY SEA TROUT, "WEAKFISH"

Geographical distribution.—The gray sea trout or weakfish is found in abundance from Cape Cod to Florida. The center of abundance, however, is found from New Jersey to North Carolina.

Commercial importance.—This species is one of the most important food fishes on the Atlantic coast. The leading States in the production of sea trout are Virginia, 8,391,626 pounds in 1929; New Jersey, 7,172,685 pounds in 1926; and North Carolina, 3,581,064 pounds in 1927.



FIGURE 7.—Gray sea trout (*Cynoscion regalis*)

Size attained.—While the gray sea trout is said to reach a weight of 30 pounds, the largest fish ever taken by rod and reel weighed 16 pounds 8 ounces, and was captured off New York in 1924.

Food habits.—The food of the adult fish varies with locality, but usually consists of fish such as menhaden and anchovies, while in the Southern States shrimp is a favorite food.

Reproduction.—Spawning off the Middle Atlantic and South Atlantic coasts occurs during May, June, and July. The spawning grounds in the region of Chesapeake Bay are located at the entrance of the bay in open ocean. The young enter the quiet bay water soon after hatching.

Rate of growth.—The young gray sea trout in Chesapeake Bay grow rapidly and reach an average length of 7 to 9 inches by the end of the first year of life. The rate of growth after the first year has not yet been satisfactorily determined.

As a game fish.—The gray sea trout is one of the gamiest of salt-water sport fishes, equaling in many respects the striped bass. It usually takes the bait, shrimp, fish, crab, or clam with avidity, and its first dashes are strong although lacking the endurance of the striped bass.

SPOTTED SEA TROUT, "SALMON" TROUT

Geographical distribution.—The spotted sea trout is found from New York to Texas although rarely ranging north of Delaware Bay. The center of abundance is from Chesapeake Bay to North Carolina and from Florida to Texas. It is essentially a warm-water, coastal fish.

Commercial importance.—This fish is more highly prized as food than the gray sea trout and is more active, wary, and more difficult to catch. Florida leads in commercial catch, 3,920,946 pounds in 1928; Texas, 1,178,052 pounds in 1929; and North Carolina, 952,543 pounds in 1927.

Size attained.—The largest fish recorded weighed 16 pounds and was captured at Ocean View, Va., in April, 1922.

Food habits.—The spotted sea trout prefers coastal waters which are somewhat brackish with grassy or sandy bottom. On the shallow



FIGURE 8.—Spotted sea trout (*Cynoscion nebulosus*)

grassy areas the species feeds on small fishes, shrimps, and small crabs.

Reproduction.—The spotted sea trout spawns in late spring and early summer from Chesapeake Bay to Texas in quiet bays or estuaries. Maturity is reached at the end of the second or third year of life. The approximate number of eggs in a female 24.4 inches long, taken along the coast of Texas, was 1,118,000.

Rate of growth.—On the basis of studies made along the Texas coast the spotted sea trout attains an average length of about 6 inches by the end of its first winter, 10 inches by the end of the second winter, and 12 inches by the end of the third winter. A fish 20 inches long is about 8 years old.

As a game fish.—The spotted sea trout, or "salmon" trout as it is called in Chesapeake Bay, is a voracious biter and is much more gamey with greater powers of endurance than its relative, the gray sea trout. Unfortunately, the species is not so abundant in the Chesapeake region as is the gray trout.

SPOT, "LAFAYETTE"

Geographical distribution.—The range of the spot is from Massachusetts to Texas. Occasional appearances in brackish or fresh

water do not alter the fact that the normal habitat of the fish is strictly marine.

Commercial importance.—The States producing the bulk of the catch are: North Carolina, 3,309,665 pounds in 1929; New Jersey, 1,217,704 pounds in 1926; and Virginia, 871,964 pounds in 1929.

In some localities the spot is much more abundant one year than another. This fact caused the name "Lafayette" to be bestowed upon it because of its periodical reappearance coincident with the visit of Lafayette to this country in 1824.

Size attained.—The small inferior mouth of the spot is indicative of the bottom feeding habits, and hence of the type of food. Crustaceans, such as small crabs, form the bulk of the diet.

Reproduction.—The spot spawns in the late fall or early winter in the ocean. Delaware Bay probably marks the northern spawning limit. The eggs have not been discovered, but very young fish have



FIGURE 9.—Spot (*Leiostomus xanthurus*)

been taken recently off the North Carolina coast from November to February. Sexual maturity is probably reached in its third year.

Rate of growth.—The average length of the spot attained at the age of 12 months is from 3 to 4 inches in New Jersey; 5 inches in Chesapeake Bay; 5.6 inches in North Carolina; and 5.1 to 6 inches in Texas. At the end of the second year New Jersey fish reach a length of 6.8 to 8.8 inches and the Texas fish 7.4 to 8.8 inches. It is estimated that 3-year-old spots in New Jersey are from 9.5 to 11.5 inches long.

As a game fish.—The spot is a small fish and is not likely to prove very exciting to the average angler. However, it takes the hook readily and is taken in great abundance in Chesapeake Bay, particularly at Ocean View, Va.

STRIPED BASS, "ROCKFISH"

Geographical distribution.—The natural distribution of the striped bass or rockfish appears to be from the Gulf of St. Lawrence

northern Florida, and there are a few more or less authentic records of its occurrence in the Gulf of Mexico. As indicated by the fisheries, its present centers of abundance lie between Cape Cod and North Carolina, where it ascends all suitable rivers to spawn and in pursuit of food. In 1888 and again in 1889 it was introduced into California coastal waters, where it readily became acclimated and increased rapidly.

Commercial importance.—The striped bass is one of the best and largest of American anadromous fishes. Its meat is firm, flaky, and of excellent flavor. According to tradition, many years ago it was very abundant on the New England coast north of Cape Cod, in the Bay of Fundy, on the coast of Nova Scotia, and the coast of New Brunswick. In the United States north of Cape Cod it is now comparatively rare and in the Bay of Fundy and Gulf of St. Lawrence far scarcer than in former years. The latest complete statistics show that the striped bass fishery of the United States amounts to about two and a half million pounds annually. This amount does not include the thousands of pounds caught by sportsmen. The

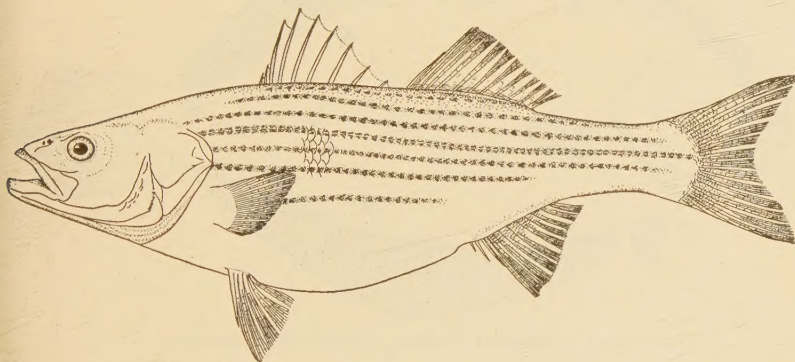


FIGURE 10.—Striped bass (*Morone saxatilis*)

striped bass is the third most valuable fish in the United States by price per pound. The State of Maryland ranks first, 1,291,595 pounds in 1929; California, second, 484,113 pounds in 1928; and Virginia, third, 289,551 pounds in 1929.

Size attained.—The largest striped bass on record were several taken at Edenton, N. C., in April, 1891, each of which weighed 125 pounds. The record weight appears to be 73 pounds for rod and reel caught fish.

Food habits.—The striped bass is a voracious fish, preying largely upon smaller fishes such as shad and river herrings. It often frequents rocky shores and beaches of bays and sounds at high tide in search of crabs, shrimp, and other food.

Reproduction.—Spawning occurs in the late spring and early summer, the striped bass ascending rivers and their tributaries for that purpose. The principal streams on the Atlantic coast of the United States are those flowing into Albemarle Sound, N. C., Chesapeake Bay, and New York Bay.

Rate of growth.—Very little is known concerning the growth of the striped bass but it is believed to be quite rapid.

As a game fish.—The striped bass is an extremely popular and excellent game fish. It is taken largely by surf casting along the coast of southern New England, Long Island, and New Jersey. In Chesapeake Bay it is obtained both by still fishing and trolling.

The character of striped bass tackle should be made to conform to the waters to be fished and the size of the fish frequenting them. The great strength and powers of endurance of the fish require skill in handling it if capture is to be made in a sportsmanlike way.

SUMMER FLOUNDER, "FLUKE"

Geographical distribution.—This flounder ranges from Maine to South Carolina and probably to Florida.

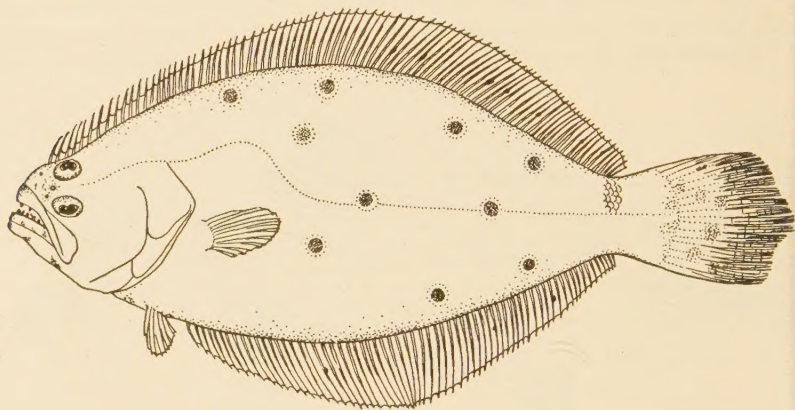


FIGURE 11.—Summer flounder (*Paralichthys dentatus*)

Commercial importance.—Accurate statistics of the annual catch of summer flounders are difficult to obtain as several other species of flatfishes are included with *Paralichthys dentatus*. Virginia produced 344,406 pounds and Maryland 123,494 pounds in 1929.

Size attained.—The largest summer flounder on record caught by rod and reel weighed 19 pounds, while 26 pounds is said to be the maximum size attained.

Food habits.—The food of the summer flounder consists largely of fish. Squid, shrimp, and crabs are also eaten. This fish is usually seen on sandy shores, partly buried in the sand but its movements are rapid when in pursuit of bait.

Reproduction.—Comparatively little is known of the spawning habits of this flounder. The eggs are deposited during the winter, however, probably offshore in deep water.

Rate of growth.—At the age of 1 year the summer flounder in Chesapeake Bay attains a length of 4.7 to 7.1 inches; and at about 2 years of age the length centers around 10.6 to 11 inches.

As a game fish.—The summer flounder is caught in large numbers along the Middle Atlantic coast. It takes the hook freely and offers good resistance.

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